

**DECLARATION OF KEVIN F. SMITH
UNDER 37 CFR 1.131 ANTEDATING A PRIOR ART REFERENCE**

I, Kevin F. Smith, acknowledge that any willful false statements in the like are punishable by fine or imprisonment or both and they jeopardize the validity of the application or any patent issuing thereon. All statements made herein are made of my own knowledge and are true and all statements made on information and belief are believed to be true. I hereby declare that I am the inventor of U.S. Patent Application Serial No. 09/689,488 entitled **PRESCHEDULING SEQUENTIAL DATA PREFETCHES IN A PREEXISTING LRU CACHE**, which was filed on October 12, 2000 (hereinafter the '488 application). I have recently become aware of a prior art reference which has been cited against my patent application. The reference is U.S. Patent No. 6,622,168 B1 Issued to Anindya Datta filed on November 24, 2000 for a **DYNAMIC PAGE GENERATION ACCELERATION USING COMPONENT LEVEL CACHING**.

I declare that I invented the subject matter of my patent application prior to the date of filing of U.S. Patent No. 6,662,168 B1, (hereinafter the '168 patent) which was filed on November 24, 2000 and claims priority to a Provisional Patent Application No. 60/195,806 filed on April 10, 2000. In support of this statement, I am submitting Exhibit A which is an IBM disclosure document entitled "Disclosure SJO8-1999-0443" and Exhibit B entitled "Efficient mixing of sequential prefetches with random access data in a preexisting LRU cache." Exhibits A and B are hereby incorporated by reference and attached as part of this affidavit.

Exhibit A was created by me on December 13, 1999 as evidenced in Exhibit A by the "created by" and "created on" date in the top box on page 1. Exhibit A contains a description of my invention which evidences the fact that the invention was reduced to practice by at least that date. In fact, numbered item 1 indicates that my invention was reduced to practice on December 10, 1999. See Exhibit A, page 2, question 1. This assertion is further supported by my answer to item number 4 on page 2 in which I describe that a working internal prototype was developed on December 10, 1999. Furthermore, numbered items 1-3 beginning on page 1 and ending on page 2 include a description of the concept of my invention.

I declare that the subject matter of my invention described on pages 1 and 2 is read on by claim 1 in the '488 application. Specifically, on page 2 under numbered item 2, I describe a process of using estimated single reference residency times "to model the utility of keeping prefetched data for I/O streams...expected to benefit from cache prestaging." At the top of page 2, I relate the idea of remotely modeling a cache such as an LRU cache. In particular, I refer to operation across a physical boundary. Operation across a physical boundary is evidence of the "remote" operation concept included in claim 1.

I explain that a computer model is used to model an LRU cache. Then, I explain that the prefetch "count" recorded in the computer model serves as the basis for invoking an actual prefetch into the LRU cache being "remotely modeled." See numbered item 2 on page 2 of Exhibit A. I declare that this invocation of an actual prefetch corresponds to "making a cache management decision" as that phrase is used in claim 1. This concept is further evidenced on slide five of Exhibit B. Consequently, I submit that claim 1 reads on my description provided in both Exhibits A and B (explained below).

I do hereby declare that my description, as set forth in the numbered paragraphs of pages 1 and 2 of Exhibit A, together with my description provided on pages 1-9 of Exhibit B do constitute a completion of my invention by at least December 10, 1999 which is prior to the filing date of April 10, 2000, the earliest effective filing date for the '168 patent.

I declare that Exhibit B is part of Exhibit A as Exhibit B is referenced in the Exhibit A as evidenced by the note on page 4 in the box labeled "Features to be searched:." Exhibit B was included in a search request. Therefore, Exhibit B was created at least as early as January 14, 2000 as evidenced by the date the search request was sent indicated on page 4 in the box labeled "Date sent:." I declare that Exhibit B was also provided to present and clarify the concept of my invention to an internal patent review board.

Exhibit B provides further proof of the completion of my invention and further describes aspects included in the main claim, Claim 1. Specifically, slides 7-9 describe specific steps of my invention. For example, slide 7 describes in the first two bullets, the three method steps (determining cache size and periodically fetching the hit ratio, cached I/O rate and estimate of the SRRT) set forth in claim 7, that depends from claim 1. Still on slide 7, the fourth bullet is incorporated into claim 14 (prefetching if a dynamic threshold is exceeded). On slide 8, the third bullet is incorporated into claim 18 (adjusting the internal model if alternate prefetch criteria values are available). Slide 9 describes the inputs (cache size, periodic - hit ratio feedback, cached I/O rate feedback) and outputs (prefetch candidates identified, optimal prefetch threshold identified, and value of prefetching quantifiable) for a method implementing the my invention.

I declare that the description of the facts and circumstances surrounding disclosure and reduction to practice of my invention as described above provide a clear explanation of the facts established by Exhibits A and B and relied upon herein.

Finally, I declare that all the concepts embodied and memorialized within Exhibits A and B were carried out in the United States in accordance with this country's laws. In particular, the events documented by Exhibits A and B occurred while I was employed by International Business Machines (IBM) and working at IBM's San Jose office located in San Jose, California, United States of America. I declare that the conception of the ideas comprising my patent, my invention's completion, and its reduction to practice occurred in the United States of America.

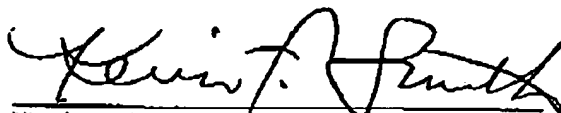
My invention was reduced to practice on December 10, 1999 as evidenced by a working prototype. See Exhibit A, page 2, numbered item 4 and answer to question number 1. Thus, my date of invention predates the earliest possible priority date (April 10, 2000) for the '168 patent. Additionally, I was diligent in filing the patent application from December 10, 1999 forward. I kept the invention confidential as evidenced by my answers to questions 2 through 5 on pages 2 and 3 of Exhibit A. I maintained this confidence until the actual filing date of the patent application which was October 12, 2000.

In addition to reduction to practice, I exercised diligence in submitting the invention submission to IBM. As evidenced by the creation date in the top box of page 1 of Exhibit A, I prepared a complete disclosure within 3 days (December 13, 1999) of completing a workable prototype (December 10, 1999). After submission of my idea, IBM initiated a search on January 14, 2000 indicated by the "Date sent:" field on the search information box on page 4 of Exhibit A. The search was completed and received by IBM on February 9, 2000 as indicated by the "Actual completion date:" field in the search information box on page 4 of Exhibit A and by the stamped date on the search report included herewith as Exhibit C.

Subsequently, IBM attorneys reviewed the search to determine if the patent application was novel. Upon determining that it was, it was submitted to outside counsel for preparation and filing on March 14, 2000 as evidenced by a dated letter to outside counsel included herewith as Exhibit D. Outside counsel then took a disclosure for the patent application during May of 2000. A first draft of the patent application was submitted to me on or about June 9, 2000. It was then submitted to the in-house IBM attorney on July 7, 2000 for final review. The Patent application was approved by myself and the IBM attorney and ultimately filed on October 12, 2000. All parties involved exercised due diligence in preparing, reviewing, and submitting the patent application.

I further declare that the prior art reference 6,622,168 B1 which has been cited by the Examiner in this case does not claim the same invention as my patent application.

Dated this 30 day of March, 2005


Kevin F. Smith